Effective Date: April 17, 2001

**Annex No. 001**

To

Memorandum of Agreement (MOA) FNA/05-97-01
Between the
Federal Aviation Administration (FAA)
And the
National Aeronautics and Space Administration (NASA)
Concerning
Support of FAA R&D Field Offices at NASA Research Centers

**Research and Development of**
**Distributed Air/Ground Traffic Management Technologies**
**For Deployment in the National Airspace System**

## I. Purpose

The purpose of this annex is to provide FAA expert technical support to the Advanced Air Transportation Technologies Project (AATT), a component of NASA's Aviation System Capacity Program. Support will be provided in the areas of (1) the harmonization of NASA technology development plans and goals with FAA National Airspace System (NAS) modernization goals, and (2) systems development engineering. This agreement is in concert with recommendations from both the FAA and NASA Inspector General offices to further the collaboration and cooperation that exists between the two agencies.

This annex supports cooperation between the FAA and NASA in the area of *cockpit/air traffic control integration research* in accordance with the following NASA/FAA joint agreements:

a) Memorandum of Understanding (MOU) FNA/05, defining joint activities to be conducted under the category of program support, dated August 15, 1990.

b) Memorandum of Agreement (MOA) FNA/05-97-01 concerning support of FAA R&D Field Offices at NASA Research Centers, dated March 12, 1997.

c) Interagency Agreement DTFA01-97-Z-02031 for the transfer of funds between DOT/FAA and NASA concerning support of the FAA R&D Field Office at the NASA Langley Research Center, dated July 15, 1997.

## II. Background

Distributed Air/Ground Traffic Management (DAG TM) is a significant activity within the AATT project that is focused on far-term operations of the National Airspace System. DAG TM is based on the fundamental premise that all system participants can be used both as information suppliers and as users, thereby enabling user collaboration and cooperation in all levels of traffic management decision making. Successful operation in the future operational environment will be achieved through new human-centered operational paradigms enabled by innovations that include air- and

ground-based automation aids, information sharing, and advanced communication, navigation, and surveillance (CNS) technologies. NASA is developing airborne and ground-based decision support automation and the support capabilities needed to support DAG TM feasibility research. These capabilities include CNS models, simulations of the future NAS, and flight test facilities. Since many of the developed technologies are to be fielded by the FAA, success of DAG TM depends on coordination of NASA technology and support capabilities development plans with FAA modernization goals. This coordination will require dedicated resources from both the FAA and NASA. This document facilitates NASA/FAA technical collaboration by providing for an FAA personnel assignment to the FAA R&D Field Office located at NASA Langley Research Center, Hampton, Virginia, to work with the Aircraft Systems and Operations (AS&O) Subelement of AATT.

## III. Statement of Work

The FAA Office of Aviation Research agrees to a personnel assignment to the NASA Aviation System Capacity Program to serve as a member of the NASA AS&O Team. The incumbent will be a full-time resident at Langley Research Center in Hampton, Virginia, during the performance of duties related to this assignment.

A. Assignment Duties:

1. Coordinate with AATT AS&O manager to prepare and update program plans, manage budgets, communicate progress to high-level management within NASA, and interact with industry, government, and international organizations involved in the advancement of distributed air/ground approaches to air traffic management.
2. Assist AATT AS&O project engineer in leading system engineering efforts, coordinating civil service and contractor R&D teams, and tracking progress against project milestones.
3. Provide relevant FAA organizations on-going awareness of NASA R&D status and findings in order to enable the FAA to more effectively leverage NASA work and utilize results.
4. Identify need for and coordinate specialized technical support of AATT AS&O R&D from within the FAA.
5. Assist in the coordination of AS&O R&D activities with those of other NASA centers and other projects at NASA Langley Research Center.

B. Responsibilities:

1. NASA (AATT) will:

   a) Transfer funds as specified in Item D, "Funding," to the FAA for a personnel assignment to enable the successful completion of duties as specified in Item A., "Assignment Duties."
   b) Provide office space and other services in accordance with NASA/FAA MOA FNA/05-97-01
   c) Provide appropriate computer resources and laboratory access at the duty station
   d) Provide reimbursement for costs of NASA-required travel and training as specified in Item D, "Funding."

2. FAA will:

   a) Provide a personnel assignment to the FAA R&D Field Office at NASA Langley Research Center, Hampton, Virginia, to enable the successful completion of duties as specified in Item A., "Assignment Duties" for the period of performance as specified under Section IV, "Period of Performance."
   b) Cover all costs of FAA-required travel, training, and administrative support as specified in Item D. "Funding."

C. Deliverables:

Deliverables consist of the following:

1. Periodic tracking reports as required for project management, including inputs to NPG 7120.5A program planning documentation
2. Configuration management documentation for AS&O-developed software technology
3. Technical summaries of project progress
4. Facilitation of communications and meetings as needed to meet assignment duties
5. Oral presentations co-authorship of technical papers as needed to meet assignment duties

D. Funding:

NASA (AATT) agrees to reimburse the FAA as indicated below, to support the research and development requirements related to this activity. NASA will transfer these funds to FAA on an annual basis.

| Fiscal Year | Salary | Relocation | Travel/Training |
|---|---|---|---|
| 2001 | $105K | $25K | $10K |
| 2002 | $110K | $0K | $10K |

FAA agrees to pay in-house costs related to this assignment as stated above.

| Fiscal Year | Admin Support | Travel/Training |
|---|---|---|
| 2001 | As Required | $10K |
| 2002 | As Required | $10K |

## IV. Period of Performance

This annex shall become effective upon the signing of the last approving party and shall remain in effect until March 12, 2002. In the event the period of performance for MOA FNA/05-97-01 is extended beyond March 12, 2002, the period of performance for this annex will also be extended, subject to availability of funds.

**Point Of Contact**

The point of contact for the NASA Aircraft Systems and Operations Team is:

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The point of contact for the FAA Office of Aviation Research is:

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**AGREED:**

**Department of Transportation**
**Federal Aviation Administration**

Herman A. Rediess, Director
Office of Aviation Research, AAR-1

4-17-01
Date

**National Aeronautics and Space Administration**
**Langley Research Center**

Ruth M. Martin, Associate Director for Program Integration

March 2, 2001
Date

**CONCURRENCE:**

**Department of Transportation**
**Federal Aviation Administration**

George C. Greene, Acting Manager
FAA R&D Field Office (Langley), AAR-210

March 6, 2001
Date